From 'Nakkeeran' to 'Avudaiyar Koil'

The Continuous Astronomical Knowledge of Tamils [1]

Tamil civilization did not stop merely with literature; it stood as a rare art form encompassing science, astronomy, and sculpture. Serving as evidence for this are the **'Nedunalvadai'** poem sung by the **Sangam-era poet Nakkeerar,** and the stone pillar carved with the shapes of stars in the **Avudaiyar Koil** (Thirupperunthurai) in the Pudukkottai district.

During the Sangam period, a semicircular pediment (canopy) was built between two pillars, coated with clay, and painted with the 12 zodiac signs, the shapes of 27 stars, and the positions of planets. At the Avudaiyar Koil, the shapes of the 27 stars were carved as sculptures on the stone lintel of the **Manikkavasagar** shrine. This article explores the amazing connection between literature, science, and sculpture.

Nakkeerar's Astronomical Knowledge - The Sangam literary work 'Nedunalvadai' describes the sorrow of the queen who is separated from the Pandyan king (The queen is longing for a husband due to lust). This poem contains very precise astronomical references, confirming that ancient Tamils had deep knowledge regarding the zodiac system and the movement of stars.

Astronomy Drawn on Clay-Coated Pillars in the Sangam Era - Nakkeerar's poem mentions a pillar in the Pandiya queen's palace. During the Tamil Sangam era, to make astronomical information easily

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understandable for people, the palace pillars were coated with clay (lime), and the shapes of the zodiac and stars were drawn on them.

Nakkeerar's Astronomical Lines (Nedunalvadai: 157-163) These lines by Nakkeerar, the head poet of the Tamil Sangam, serve as excellent literary evidence of the ancient Tamils' profound astronomical knowledge. The poem lines describe a sturdy pillar coated with fine clay, starting with the **Aries** zodiac sign, and the queen looking at the moon conjoined with the star Rohini.

நெடுநல்வாடை பாடல் வரிகள் :

நுண் சேறு வழித்த நோன் நிலைத் திரள் கால்
ஊறா வறு முலை கொளீஇய கால் திருத்திப்
புதுவது இயன்ற மெழுகு செய் படமிசைத்
திண் நிலை மருப்பின் **ஆடு தலையாக**, ...[160]

விண் ஊர்பு திரிதரும் வீங்கு செலல் மண்டிலத்து
முரண் மிகு சிறப்பின் செல்வனொடு நிலைஇய
உரோகிணி நினைவனள் நோக்கி, நெடிது உயிரா,
இதழ் ஏந்திய மலிந்து வீழ் அரிப்பனி
செவ்விரல் கடைக்கண் சேர்த்திச் சில தெறியாப் . . . .[165]
புலம்பொடு வதியும் நலங்கிளர் அரிவை ..."

Explanation of the Poem:

1. **Pillar coated with fine clay:** Nakkeerar mentions a "sturdy standing pillar coated with fine clay" where astronomical notes were drawn.

2. **Starting with Aries:** The mention of "having Aries (the ram) as the beginning" clarifies the knowledge about the zodiac system comprising 12 signs.

3. **The wandering Moon:** A reference to the moon wandering in the expanding celestial sphere. The Pandyas belong to the Lunar Dynasty. Just as the Moon wanders across the sky, the Pandya King, too, wanders.

4. **Rohini-Moon Conjunction:** Nakkeerar describes the Queen observes the Moon in the heavens, united with the star Rohini; yet, she yearns, for the Pandya King has not yet arrived to unite with her. She is thinking about her own loneliness. Through this, it is evident that planetary movements were observed accurately.

Celestial Stars Carved in Stone - The same astronomical knowledge that was practiced by drawing on clay during the Sangam period was later sculpted into a stone pillar at Avudaiyar Koil by a sculptor. This standing pillar, located above the Manikkavasagar shrine, features the carved shapes of 27 stars. The exact celestial appearance that Nakkeerar mentioned as being drawn on a clay-coated pillar was given shape in stone at Avudaiyar Koil, serving as a brilliant example of how Sangam literature inspired sculpture.

Astronomical Accuracy and Sculpture - The most significant feature of this stone pillar is that the stars are carved exactly in the shapes (constellations) they appear to the naked eye in the sky:

- **Ashwini:** In the shape of a horse's head.
- **Karthigai:** In the shape of a cluster of six stars.
- **Magam:** In the shape of a palanquin or yoke.
- **Anusham:** In the shape of an umbrella or bow.

Carving all 27 stars in the exact shapes they appear in the sky demonstrates the pinnacle of Tamil astronomical knowledge.

The astronomical knowledge drawn on clay in the Sangam era was later carved in stone and established as a standing pillar at **Avudaiyar Koil,** a connection clearly explained to us by Nakkeerar's 'Nedunalvadai' lines. This stone pillar stands as an indestructible proof that, many centuries ago, Tamils accurately calculated the shapes of stars and their rotational patterns. Let us praise this ancient knowledge of the Sangam Tamils, its literary richness, and the artistic skills of the sculptors of AvudaiyarKoil.

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